THE ELECTROCARDIOGRAPH IN GENERAL PRACTICE

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EVERY patient referred to a cardiologist is a potential cardiac neurotic. The patient is no fool, and he realizes that the heart is the most important part of his body. If he goes to see a heart specialist, and he is told that there is nothing wrong with him, he may or may not be satisfied. If there is anything abnormal in his heart he is ill at ease because he feels that it is potentially lethal; if he is assured that there is nothing wrong he will be satisfied only if he has complete confidence in the consultant he sees, for he will argue that if his doctor, who may have known him for 20 odd years, thinks there is something wrong, (else why the referral to a specialist), then there probably is something amiss, and the consultant who has only seen him for 20 minutes may be in error. It behoves us, therefore, to think hard and long before referring a patient, for in such ways are the seeds of anxiety sown.

Nevertheless there will be many occasions when a second cardiological opinion is both necessary and desirable, but this should only be so when the family doctor has made an exhaustive examination himself. However thorough and conscientious he may be, it is almost impossible to come to a full understanding of the patient's condition without a chest x-ray and an electrocardiogram. When all is said and done the electrocardiogram gives a direct record of the heart's action, and is in itself therefore of unique value. I am not suggesting that every patient should have this tracing taken, but it is certainly desirable when definite pathology is suspected.

The electrocardiograph is of value to the general practitioner in four respects: as an aid to diagnosis, as a therapeutic weapon, as a guide to prognosis, and as a personal stimulus.

My experience is limited to one year with a machine which has

been shared amongst our partnership of three, and all the cases described in this paper have been seen during the last 12 months.

Diagnostic

The diagnostic value of the electrocardiograph is obvious, but in general practice it is probably more frequently of value as a negative rather than as a positive aid.

A case in point was a Mrs A. M. She presented with sudden shortness of breath following a week or two's previous breathlessness on exertion. The attack occurred during the night and was associated with a measure of substernal pain. She had already been diagnosed as suffering from angina of effort. The pain was of moderate severity in the centre of the chest, and was associated with what she called a "stiff right arm". There was a certain amount of reference into the jaw, but this was not marked. The pain continued for six or eight hours, but was never of sufficient severity to require morphine. An electrocardiogram tracing taken at the time showed a flat T wave in S 3, and an occasional extra systole. There was no evidence of recent coronary infarction, and a subsequent tracing a week later showed no change.

It is this type of illness that poses a very real difficulty in practice, and it is often hard to decide whether the patient should be moved to hospital or not. In this instance the patient could be firmly reassured and mobilized at an early date.

A different type of problem was presented by Mr N., a Spaniard. He was found lying on the floor unconscious, surrounded by jabbering relatives who spoke virtually no English. He recovered fairly rapidly, but his pulse rate was noted to be 54. The question obviously arose as to whether this was an Adams-Stokes attack associated with complete atrioventrical block, but an ECG showed simple bradycardia with left ventricular preponderance. The diagnosis of syncope was made, the patient reassured, and there was no need to refer him to a hospital clinic. He has remained symptom-free for nine months.

A third case was of a 72-year-old lady, Mrs H., also of foreign extraction, who complained of angina of effort. She developed a severe angina at rest and did not obtain relief from trinitrini. One attack lasted for as long as 50 minutes, and again the question of acute coronary ischaemia, possibly requiring anti-coagulants, arose. However, an ECG at the time showed her to be suffering from atrial flutter, and the anginal pain coincided with these attacks. She was digitalized, whereupon her angina at rest completely disappeared, and she only had occasional attacks on exertion, all of which responded to trinitrini.

These three cases taken at random show the value of an ECG tracing in elucidating the diagnosis. All three were treated at home, but none of them could have been diagnosed with complete confidence on physical signs alone.

Therapeutic

Besides being of value to the doctor, the actual taking of a tracing impresses the patient with the thoroughness and comprehensiveness of his examination, and is of definite value in the management of

highly strung or neurotic individuals.

A case in point, perhaps characteristically, was an American. He was on holiday here, but had had a coronary thrombosis in the States. One evening he had a severe bout of indigestion and thought it was his heart. I was called to see him, told the differential diagnosis, and asked to find someone to do an ECG to exclude serious pathology! When I produced my machine from the back of the car and did just that he was visibly taken aback; more to the point he was also completely reassured and continued his holiday with an easy mind, and a higher opinion of British State medicine.

Prognostic

It is difficult after such a short period to assess fully the electrocardiograph as a prognostic agent, but I believe that in the long run this may prove its most valuable function in general practice. There are many instances when a patient has an attack of cardiac failure or severe angina that the ECG will show obvious abnormalities, but it is difficult to appreciate their significance at that particular time. For example a patient suddenly going into failure is found to have a marked bundle branch block. This may well have been present for many years, and may or may not be of significance, but rarely has the family doctor a tracing from an earlier date to use for comparison. Gradually patients in my practice who are suspected of having heart disease, or who are bad prognostic risks, are having such tracings taken. It is hoped that in the future this will prove to be a valuable ' baseline ' from which any deviation can be appreciated. Already this has proved to be so on at least one occasion.

A clergyman, who had been complaining for some years of intermittent angina of effort, had an ECG taken which showed a gross intraventricular conduction defect, with ST depression in vectors 3–6. The picture was of anterolateral ischaemia without infarction. Seven months after this tracing was taken he was seized with an attack of substernal pain and breathlessness. A coronary thrombosis was suspected and he was admitted to the local cottage hospital for observation and treatment. A repeat electrocardiograph taken at this time showed no change from the previous tracing, and 48 hours later a herpetic rash developed. Without having the previous tracing for comparison it is more than likely that the pain would have been attributed to coronary thrombosis, and he might have been sent elsewhere, as an emergency, possibly for anticoagulant therapy.

It is notoriously difficult to reassure the cardiac neurotic, and this is the more so when one has only clinical impressions to go by. One may say with confidence to a patient whom one has seen two or three years before, that there is no cause for concern about his heart, but as often as not one's personal convictions are not conveyed to the patient with sufficient force to reassure him completely. Nevertheless, this type of patient places great reliance on pathological and other investigations, and to be able to produce two tracings which

are identical, often reassures the patient that nothing untoward has happened far more convincingly than half an hour of discussion around the subject. This reassurance is further enhanced when the doctor can himself see in black and white that no change for the worse has occurred.

Personal stimulus

The family doctor has the great advantage over the consultant that he knows his patients over the years, and is familiar with most of their life histories as well as their personal and social backgrounds. He suffers, however, from the great disadvantage that although in time this experience increases, it is difficult for his actual knowledge to increase proportionately. The hospital worker is continuously stimulated by the presence of his colleagues and in matters of controversy has the benefit of many opinions. The general practitioner is on his own, and if he misses a diagnosis he may never recover the lost ground. If the patient should get well the diagnosis remains for ever in doubt, and if the patient goes to hospital the general practitioner may remain ignorant as to where his diagnosis went awry. In these circumstances it is all too easy to get into something of a rut, and anything that acts as a stimulus and challenge is to be encouraged. The personal possession of an electrocardiograph acts in just this way. The interpretation of the tracings requires constant exercise of the mind, and frequent discussion with other people. Furthermore the tracings themselves form an actual record of what happens at a given moment of time, and if the general practitioner is unable to interpret a certain symptomatology he can often, by discussing the clinical picture, with the tracings, at a later date, receive guidance and explanation. The tracings remain an island of fact in a sea of conjecture, and form a firm basis on which a satisfactory diagnosis may later be built. I remember one patient of mine who during a period of cardiac failure had an unexplained remission. Ultimately all was well, but I felt this was more in spite of than because of my treatment. I suspected a silent coronary at the time, but the ECG excluded this dubious pathology. More to the point, though, it was pointed out later by one of the local consultants that it showed clear evidence of potassium deficiency. The fact that my treatment had included effervescent potassium salts was more fortuitous than otherwise, but thanks to the ECG tracing the lesson was belatedly learnt.

Conclusion

There is no doubt that an electrocardiograph is a valuable addition

to the equipment of the general practitioner, but it must be used with care and neither underrated nor overrated. It is quite untrue to say that it is too complicated for the general practitioner to understand. Obviously, familiarity increases with experience, but just as the ordinary doctor can interpret the majority of cardiac murmurs and ' cardiac noises ' himself, so with a little practice can he interpret the majority of ECG tracings. There will always remain a hard core that he cannot understand, but the electrocardiograph has the enormous advantage that it can be discussed at a later date with somebody of wider experience. It is certainly a rule in my practice that all tracings are submitted for a second opinion, but that in no way mitigates against the value of the machine to me and my patients.

In conclusion I would like to make two points. First, it is difficult to learn how to interpret electrocardiogram tracings by simply reading textbooks; I think there is a very real need for an occasional course devoted to electrocardiography alone. This may horrify the purists who would emphasize that tracings must always be read in conjunction with the clinical condition of the patient, and this is of course true. Nevertheless we who have not been in hospital for a longish period would welcome an explanation of the mechanism whereby the tracings are recorded and guidance in the interpretation of some of the simpler electrocardiographic patterns. I think a sufficient number of general practitioners now have their own machines to warrant such a course. Secondly it does seem very unreasonable that if a family doctor wishes to improve his standards of medicine by the acquisition and usage of such a machine, that under the National Health Service he should have to do this at a personal financial loss. If a consultant is entitled to be paid for taking such a tracing on a domiciliary consultation it would seem not unreasonable that the general practitioner should be reimbursed likewise.

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